

IN THE CLAIMS:

1. (Currently Amended) A method for producing a mesostructured film comprising the steps, in sequence, of:

(a) preparing a reaction solution comprising (i) a tin-containing compound for forming mesostructured film which contains a tin oxide, (ii) a surfactant and (iii) a solvent;

(b) applying the reaction solution onto a substrate having a capability of orienting a plurality of assemblies of the surfactant in a predetermined direction;

(c) retaining the substrate onto which the reaction solution has been applied in an atmosphere having a relative humidity from 10% to 30% to dry the solvent in the reaction solution; and

(d) after the solvent is dried, retaining the substrate in a water vapor-containing atmosphere having a relative humidity from 70% to 100% ~~for at least 5 hours~~ to orient the plurality of assemblies of the surfactant in the predetermined direction, thereby improving regularity of a mesostructure of the mesostructured film,

(e) wherein, in the step of retaining the substrate in the atmosphere having a relative humidity from 70% to 100%, tin oxide in a pore wall of the mesostructured film is crystallized to form a mesostructured film containing crystallized tin oxide in the pore wall.

2. (Cancelled)

3. (Previously Presented) A method for producing a mesostructured film according to claim 1, wherein the tin-containing compound is a tin chloride.

4. (Cancelled)

5. (Previously Presented) A method for producing a mesostructured film according to claim 1, wherein the step of forming the mesostructured film having a plurality of assemblies of the surfactant oriented in the predetermined direction is performed at a temperature of 100°C or less.

6. - 16. (Cancelled)

17. (Currently Amended) A method for producing a porous film comprising the steps, in sequence, of:

- (a) preparing a reaction solution containing (i) a tin-containing compound for a porous material which contains a tin oxide, (ii) a surfactant and (iii) a solvent;
- (b) applying the reaction solution onto a substrate having a capability of orienting a plurality of aggregates of the surfactant in a predetermined direction;
- (c) retaining the substrate onto which the reaction solution has been applied in an atmosphere having a relative humidity from 10% to 30% to dry the solvent in the reaction solution;
- (d) after the solvent is dried, retaining the substrate in a water

vapor-containing atmosphere having a relative humidity from 70% to 100% ~~for at least 5 hours~~  
to orient the plurality of assemblies of the surfactant in the predetermined direction, thereby  
improving regularity of a mesostructure of the mesostructured film; and

(e) removing the surfactant to form a pore,

wherein, in the step of retaining the substrate in the atmosphere  
having a relative humidity from 70% to 100%, tin oxide in a pore wall of the mesostructured film  
is crystallized to form a mesostructured film containing crystallized tin oxide in the pore wall.

18. (Cancelled)